

**EG&G  
SUPERSEDED  
DOCUMENT**

ROCKY FLATS PLANT  
EMD OPERATING  
PROCEDURES MANUAL  
VOLUME III: GEOTECHNICAL

Manual No.: 5-21000-OPS-GT  
Procedure No.: Table of Contents, Rev 58  
Page: 1 of 3  
Effective Date: 05/06/94  
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET  
WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)  
VOLUME II: GROUNDWATER (GW)  
VOLUME III: GEOTECHNICAL (GT)  
VOLUME IV: SURFACE WATER (SW)  
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DOCUMENT CLASSIFICATION REVIEW WAIVER  
PER R.B. HOFFMAN, CLASSIFICATION OFFICE  
JUNE 11, 1991

ADMIN RECORD

A-SW-001369

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94-DMR-000418	Advanced Notification to the State of Colorado	2	04/22/94
GT.04	Rotary Drilling and Rock Coring	2	05/12/92
93-DMR-000957	FORM GT.4A Modification	2	01/10/94
94-DMR-000419	Advanced Notification to the State of Colorado	2	04/22/94
GT.05	Plugging and Abandonment of Boreholes	2	05/12/92
93-DMR-000961	Form GT.5A Modification	2	01/10/94
GT.06	Monitoring Wells and Piezometer Installation	2	05/12/92
DCN 93.08	PVC Schedule Change	2	05/10/93
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DCN 93.14	Revision of Figure GT.6-3	2	10/06/93
GT.07	Logging and Sampling of Test Pits and Trenches	2	05/12/92
94-DMR-000276	Section GT.07 and form Modifications	2	02/28/94
GT.08	4-E42-ER-OPS-GT.08 Surface Soil Sampling	3	01/25/94
94-DMR-000133	Sampling Modifications	3	02/04/94
94-DMR-000229	Editorial Correction GT.08	3	03/14/94
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94-DMR-000431	Calibration Occurrence Clarification	2	04/11/94
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GT.11	Plugging and Abandonment of Wells	2	05/12/92
93-DMR-000962	Form GT.11A Modification	2	01/10/94
•94-DMR-000561	Section 11 Modification	2	05/06/94
GT.15	Geophysical Borehole Logging	2	05/12/92
GT.17	Land Surveying	2	05/12/92
DCN 93.01	Land Surveying Clarification	2	09/02/93
•94-DMR-000560	Text Modification	2	05/06/94
GT.18	Surface Geophysical Surveys	2	05/12/92
DCN 93.02	5.5 Time Domain Electromagnetic Metal Detection	2	11/22/93
GT.19	Field Gas Chromatographs	2	05/12/92
GT.20	Procedures for Soil Interstitial Water Sampling and Sampler Installation	2	05/12/92
94-DMR-000297	Section GT.20 and form Modifications	2	02/28/94
GT.21	Cone Penetrometer Testing	1	05/12/92
GT.24	Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)	0	05/12/92

## DOCUMENT MODIFICATION REQUEST (DMR)

Page 1 of 1

Refer to 1-A01-PPG-001 for Processing Instructions.  
Print or Type All Information (Except Signatures)

1. Date  
March 31, 1994

25. DMR. No. 94-DMR-000561 <sup>SLD 4-6-94</sup>

2. Existing Document Number/Revision  
5-21000-OPS-GT.11/Rev2

3. New Document Number or Document Number if it is to be changed with this Revision NA

4. Originator's Name/Phone/Page/Location  
J.A. Paschis/x8644/NA/080

5. Document Title  
Plugging and Abandonment of Wells

6. Document Type ☒ Procedure  
☐ Other

7. Document Modification Type (Check only one)  
☐ New ☐ Revision ☒ Intent Change ☐ Nonintent Change ☐ Editorial Correction ☐ Cancellation

8. Item

9. Page

10. Step

11. Proposed Modifications

1

2

2.0

Add the following two paragraphs at the end of Section 2.0:

This procedure also establishes the administrative requirements for incorporation of the State of Colorado, Department of Natural Resources, Office of the State Engineer, Division of Water Resources, Rules and Regulations, 2CCR 402-2 into well abandonment activities.

Prior to beginning any plugging and abandonment procedures, the Project Manager shall notify Environmental Science and Engineering, Geosciences Division. This prior notification will allow for the final opportunity to perform any necessary sampling and/or hydrologic measurements.

2

3

4.1

Modify the following reference to include the CCR number:

Colorado Division of Water Resources, Board of Examiners of Water Well Construction and Pump Installation Contractors. Revised and Amended Rules and Regulations of the Board of Examiners of Water Well Construction and Pump Installation Contractors, 2CCR 402.2. 1988. 29pp.

3

12A

9.0

Add the following paragraph at the end of Section 9.0:

The Well/Borehole Abandonment Form No. (GT.5A, Rev. 3) and a State of Colorado, Well Abandonment Report (State of Colorado, Form No. GWS-9, 7/89) will be completed and provided to the ERM Geosciences Division. The Geosciences Division will submit the Form No. GWS-9 to DOE for review, approval, and transmittal to the State of Colorado, Division of Water Resources.

4

12A

10.0

Add the following new section:

#### 10.0 APPENDIX

Following well abandonment, the individual/company responsible for plugging the well will provide the information disclosed on the form in Appendix 1, as requested to comply with Section 9.0.

12. Justification (Reason for Modification, EJO#, TP#, etc.)

1. Provide information about state requirements for well abandonment activities.
2. Expand reference to state regulatory statute relative to well abandonment.
- 3,4. Provides information of type of documentation and where to file forms.

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concuror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print and Sign (if applicable)	15. Date (if applicable)
SME	Tim Lovseth <i>Tim Lovseth</i>	4/3/94
EQS	Mark Brooks <i>Mark Brooks</i>	4-28-94
RPM	Wanda Busby <i>Wanda Busby</i>	4/12/94
EOM	Maria Broussard <i>Maria Broussard</i>	4/15/94
ETT	Gary Anderson <i>Gary Anderson</i>	29 APR 94
SPP	Steve Keith <i>Steve Keith</i>	4/18/94

16. Originator's Supervisor (print/sign/date)

Stephen H. Singer

*Stephen H. Singer*

4/7/94

17. Assigned SME/Phone/Page/Location  
Tim Lovseth/8706/5134/080

18. Cost Center  
0202

19. Charge Number  
ENV-GT

20. Requested Completion Date  
03/21/94

21. Effective Date  
5-6-94 <sup>SLD</sup>

22. Accelerated Review?  
Yes ☐ No ☒

23. ORC Review  
Not required; this nonintent change was processed as an intent change to expedite the DMR process.

24. Responsible Manager (print, sign, date)  
Mark E. Levin

*Mark E. Levin*

4/29/94

M.E. Levin

REVIEWED FOR CLASSIFICATION/UCNI

BY NA  
DATE NA

## PLUGGING AND ABANDONMENT OF WELLS

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### 2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) describes procedures that will be used at the Rocky Flats Plant (RFP) to plug and abandon (P&A) wells. Plugging refers to the physical process of filling the well cavity with grout while abandonment refers to the completion and documentation of all requirements of this SOP. Abandonment involves plugging the well with grout and all related activities and documentation as described in this SOP. For the purpose of this SOP, a well is defined as a ground penetration intended for monitoring the chemical, physical or potentiometric properties of groundwater, a ground penetration intended for production of groundwater, or a ground penetration of unknown status. Abandonment of boreholes, which are defined as ground penetrations drilled primarily for obtaining geologic and environmental information, is addressed in SOP GT.5, Plugging and Abandonment of Boreholes.

This procedure also establishes the administrative requirements for incorporation of the State of Colorado, Department of Natural Resources, Office of the State Engineer, Division of Water Resources, Rules and Regulations, 2CCR 402-2 into well abandonment activities.

Prior to beginning any plugging and abandonment procedures, the Project Manager shall notify Environmental Science and Engineering, Geosciences Division. This prior notification will allow for the final opportunity to perform any necessary sampling and/or hydrologic measurements.

### 3.0 PERSONNEL QUALIFICATIONS

Personnel overseeing the abandonment of wells will be geologists, geotechnical engineers, or field technicians with an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person.

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## PLUGGING AND ABANDONMENT OF WELLS

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### 4.0 REFERENCES

#### 4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

Aller, L., T.W. Bennett, G. Hackett, R.J. Petty, J.H. Lehr, H. Sedoris, D.M. Nielsen, and J.E. Denne. Handbook of Suggested Practices for the Design and Installation of Ground Water Monitoring Wells. EPA 600/4-89/034. National Water Well Association. 1989. 398 pp.

Colorado Division of Water Resources, Board of Examiners of Water Well Construction and Pump Installation Contractors. Revised and Amended Rules and Regulations of the Board of Examiners of Water Well Construction and Pump Installation Contractors, 2CCR 402-2. 1988. 29 pp.

U.S. Environmental Protection Agency. RCRA Ground Water Monitoring Technical Enforcement Guidance Document. Office of Solid Waste and Emergency Response. OSWER-9950.1. 1986. 317 pp.

U.S. Environmental Protection Agency. Manual of Water Well Construction Practices; Office of Water Supply. EPA-570/9-75-001. 1975. 156 pp.

#### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are as follows:

- SOP FO.3, General Equipment Decontamination
- SOP FO.4, Heavy Equipment Decontamination
- SOP FO.6, Handling of Personal Protective Equipment

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The Well/Borehole Abandonment Form No. (GT.5A, Rev. 3) and a State of Colorado, Well Abandonment Report (State of Colorado, Form No. GWS-9, 7/89) will be completed and provided to the ERM Geosciences Division. The Geosciences Division will submit the Form No. GWS-9 to DOE for review, approval, and transmittal to the State of Colorado, Division of Water Resources.

### 10.0 APPENDIX

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